METHOD FOR COMPUTING STRUCTURAL STEEL MASS (WEIGHT)

COMPUTED MASS (WEIGHT)

The engineer will compute the mass (weight) of structural steel on the basis of the following assumptions as to density - kilograms per cubic meter (pounds per cubic foot):

Steel	7850 kg/m^3	(490 lb./$ft.^3$)
Cast Iron	7210 kg/m^3	(450 lb./$ft.^3$)

The mass (weight) of rolled shapes and plates will be computed on the basis of their nominal mass (weight) and dimensions as shown in the contract documents, deducting for copes and cuts.

The mass (weight) of welds will be included in the computed mass (weight), assuming the mass (weight) of fillet welds to be used as follows:

MASS OF WELDS*

Size of Weld mm	Mass per Meter kg	Size of Weld mm	Mass per Meter kg
6	0.21	13	0.99
8	0.38	16	1.51
10	0.59	19	2.13

WEIGHT OF WELDS*

Size of Weld in.	Wt. per Foot lb.	Size of Weld in.	Wt. per Foot lb.
1/4	0.16	1/2	0.64
5/16	0.25	5/8	1.00
3/8	0.36	3/4	1.44

* The mass (weight) of welds shown is 1.5 times theoretical mass (weight).

The mass (weight) of heads, nuts, single washers, and threaded stick through of all high strength shop bolts shall be included in the computed mass (weight) on the basis of the following mass (weights):

MASS OF BOLTS

Diameter of Bolt mm	Mass per 100 Bolts kg	Diameter of Bolt mm	Mass per 100 Bolts kg
12.7	8.9	28.6	74.9
15.9	14.4	31.8	96.2
19.0	23.8	34.9	127.0
22.2	36.5	38.1	154.3
25.4	52.9	---	---

WEIGHT OF BOLTS

Diameter of Bolt in.	Weight per 100 Bolts lb.	Diameter of Bolt in.	Weight per 100 Bolts lb.
1/2	19.7	1 1/8	165.1
5/8	31.7	1 1/4	212.0
3/4	52.4	1 3/8	208.0
7/8	80.4	1 1/2	340.2
1	116.7	---	---

The computed mass (weight) shall include the total mass (weight) of field bolts as specified in Article 2408.05 and the total mass (weight) of all shims required to be furnished for incorporation into the structure.

The mass (weight) of castings will be computed from the dimensions shown in the contract documents with an addition of 5 percent for fillets and overrun.